

F. C. TYLER.
 AUTOMATIC FEED HOPPER FOR NUT TAPPING AND OTHER MACHINES.
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927,902.

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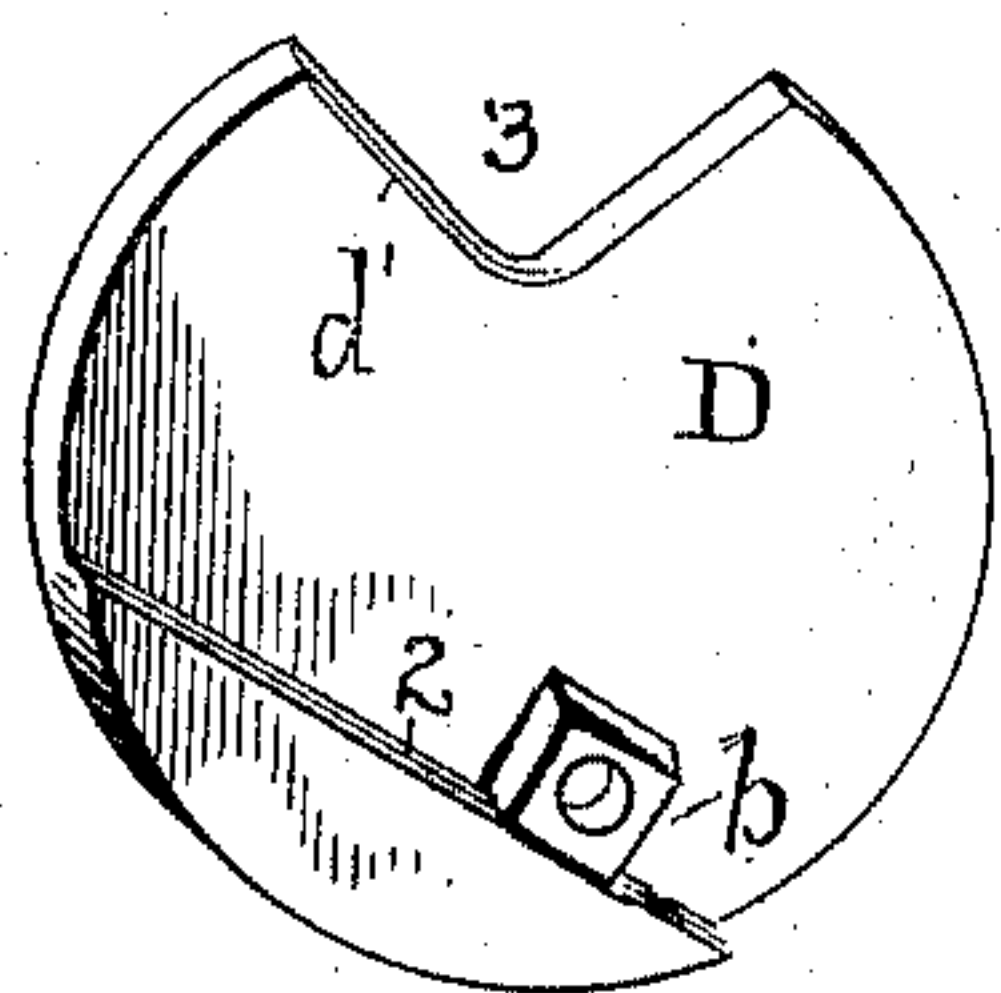
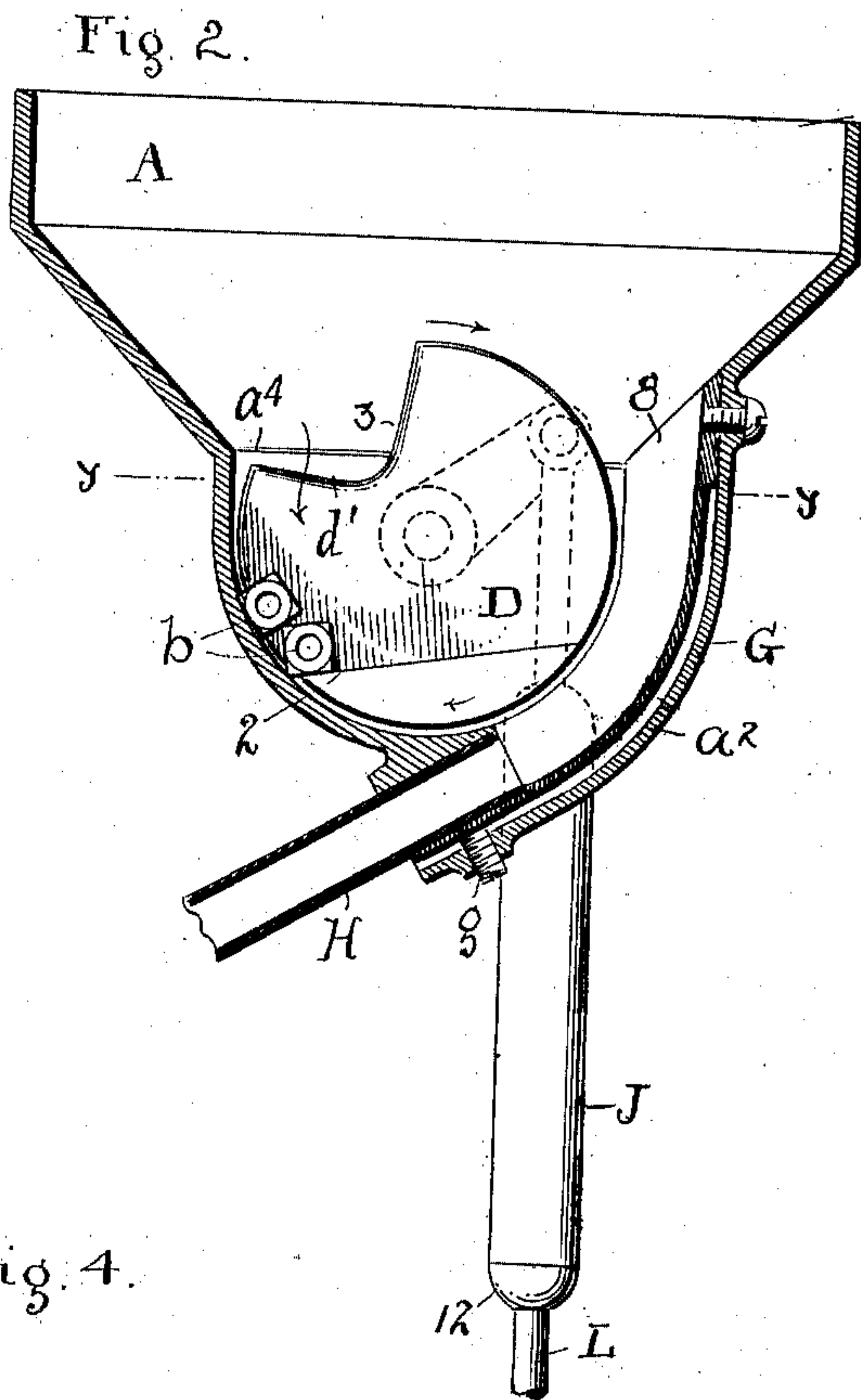
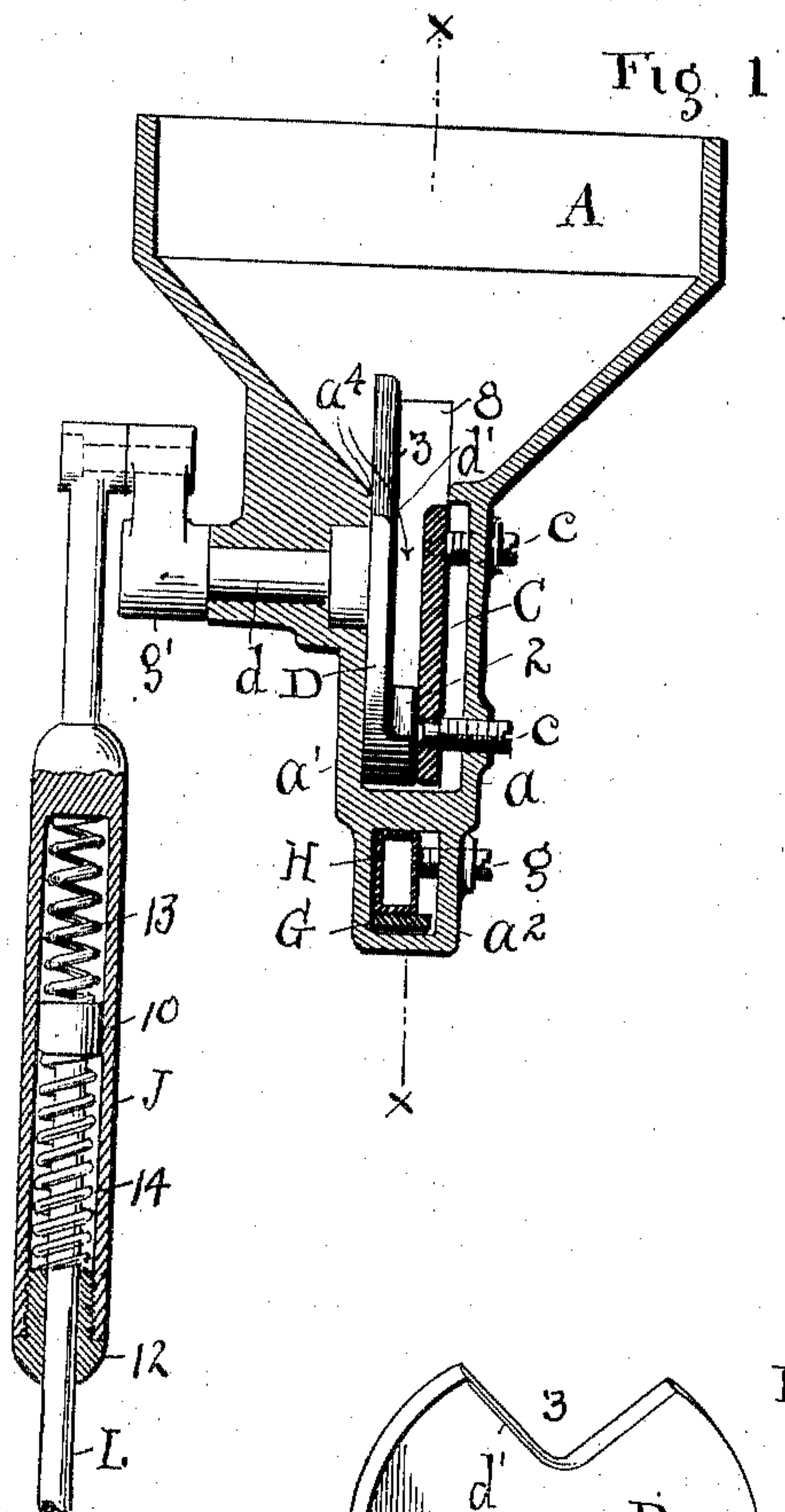


Fig. 4.

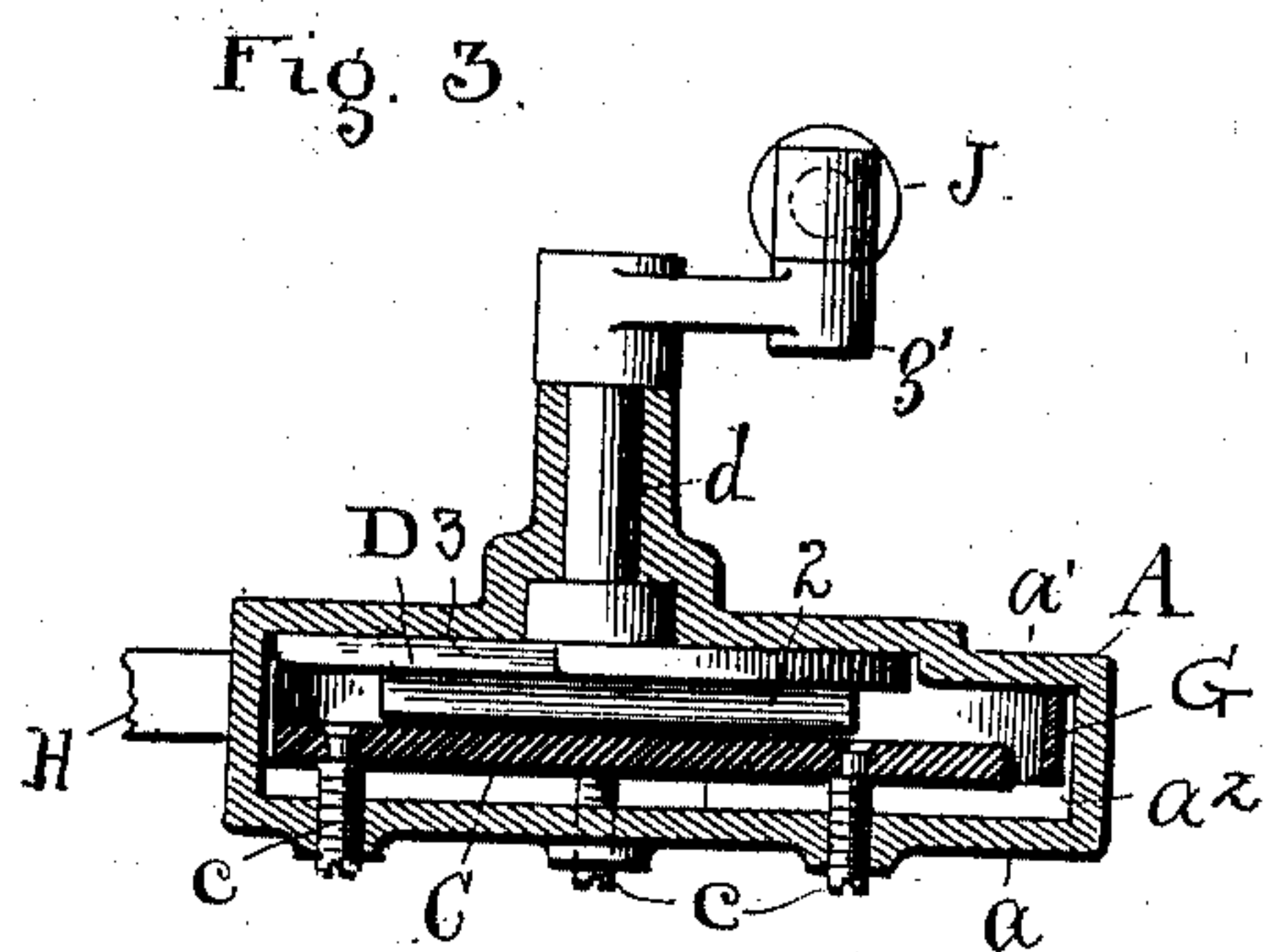


Fig. 3.

ATTEST.
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UNITED STATES PATENT OFFICE.

FREDERICK C. TYLER, OF CLEVELAND, OHIO.

AUTOMATIC FEED-HOPPER FOR NUT-TAPPING AND OTHER MACHINES.

No. 927,602.

Specification of Letters Patent.

Patented July 13, 1909.

Application filed January 15, 1906. Serial No. 296,087.

To all whom it may concern:

Be it known that I, FREDERICK C. TYLER, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Automatic Feed-Hoppers for Nut-Tapping and other Machines, and do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in nut-tapping machines, and particularly in the means for feeding the blanks or blank nuts to the machine, all substantially as shown and described and particularly pointed out in the claims.

In the accompanying drawings Figure 1 is a cross sectional elevation of my improved feeding mechanism and Fig. 2 is a side sectional elevation thereof at right angles to Fig. 1 and on a line corresponding to x, x , Fig. 1. Fig. 3 is a cross section on line y, y , Fig. 2, and Fig. 4 is a perspective view of the combined feeding disk and agitator in detail.

The importance of having at least an approximately perfect feed for the nut blanks in a machine of this kind can scarcely be overstated, because there are so many difficulties encountered in providing a uniform and certain feed for heavy angular objects like these blanks, and without which the best of tapping machines would be more or less of a failure. Thus, for example, it is one thing to get a sustained feed when a hopper is full of blanks, and quite a different thing to get such a feed when a hopper is run low or practically emptied. Obviously, also, any construction to be universally acceptable must be adapted to meet both these conditions successfully, as well as others arising in the delivery of the blanks to the machine, such as providing against any banking up or blocking of the blanks in their travel to the machine. To these ends I construct a hopper A of the shape substantially as shown with a narrowed space at its bottom between parallel side walls a and a' and from which there leads a preferably curved throat or outlet a^2 .

The feeding device D is located in the narrow space between said walls a and a' and consists of a substantially disk shaped part D, having a plain flat rear side provided with a shank or stem d supported in a bearing at

the bottom of hopper A and on or through which the disk has a limited rocking movement, and said device is further provided with a shoulder 2 running in a straight line across its front lower inner portion or side and a substantially V shaped notch 3 in its edge and top opposite said shoulder. A gage plate C is interposed between the said feeding device or disk D and wall a and is supported on or by adjusting screws c through said wall adapted to fix the limits of the space laterally between said parts according to the thickness of the blanks and into which the nut blanks b are adapted to drop edgewise and temporarily rest on said ledge or rib 2 preparatory to being discharged into throat a^2 , as said disk or device is rotated, and approximately to position as seen in Fig. 4. The extreme of rotation of the disk to the left is seen in Fig. 2, and the limit of rotation or rocking thereof is equivalent to about a quarter of a revolution. When rotation occurs to discharge the blank it is toward the right, in which case the blanks accumulated on ledge 2 will be thrown edgewise into throat or passage a^2 in the line of feed.

By reason particularly of notch 3 the disk operates as an agitator for the blanks and assists in bringing the blanks into feeding relations both as to the upper portion of the throat indicated by 8 through which some of the blanks are alined for feeding and also in relation to ledge or shoulder 2 to which other blanks come through notch 3. To this end, also, the immediate edge d' of notch 3 is somewhat below edge a^4 of the hopper, which leaves a clear way down the side of the hopper onto ledge 2. A strip G is laid in the throat or neck of outlet passage a^2 and is adjustable by set screw g to fix the size of the throat according to the size of the blank. Discharge spout H likewise is shown as fastened by screw g .

Power is communicated to disk D to rotate or rock the same through operating connections comprising in this instance a crank arm g' rigid on shaft d , and tubular coupling J engaged at one end with said arm and into which extends a connecting rod L, having a head 10. A threaded nut or cap 12 is screwed in the end of said coupling, and stiff springs 13 and 14 are operatively engaged with said rod on opposite sides of its head and are of such strength or stiffness that in ordinary operations they serve to convey ro-

tary power to disk D, but if said disk be accidentally blocked against rotation by a possible combination of the nut blanks or for other cause the said springs will yield and prevent breakage of parts. Furthermore, it occurs if there be occasional blocking against rotation one way or the other, the opposite way will be found free, and then on the return stroke the obstruction will be found broken up because of the agitation of the entire mass of blanks which bring relief to the congested corner, if this be the cause of trouble, which is probable. In this way two channels are provided for supplying blanks to the machine, one into throat a^2 through the opening 8 at the top and the other over ledge 2. It is also to be understood that this device is adapted to feed articles other than nut blanks, and no limitation in this regard is intended.

What I claim is:—

1. A mechanism adapted to feed articles, such as nut blanks, comprising a hopper and a rocking device in the bottom of the hopper of substantially disk shape constructed at its lower edge to feed the blanks and at its top edge to agitate the same.

2. A feeding mechanism for articles of tablet form having a hopper with a semi-circular bottom chamber and a discharge opening leading therefrom, and a rocking feeding device in said chamber having a straight shoulder at its lower edge and side to carry the articles downward into said discharge opening.

3. The hopper for feeding articles, such as nut blanks, having a bottom with parallel opposite walls and a discharge passage therefrom, and a substantially disk shaped rocking device in said space having a ledge on its inner side to carry blanks and constructed at its top to agitate the blanks at the entrance to said space.

4. In a blank-nut feeding mechanism, a hopper having a discharge opening and a rotatable feed device at the mouth of said opening and a laterally adjustable plate at the side of said device to fix the width of space between said parts for feeding blanks of different thicknesses.

5. The hopper having parallel sides at its bottom and an outlet therefrom, in combination with a blank feeding device between said sides constructed at its top to agitate the blanks in the hopper and provided at its bottom with a straight shoulder to feed the blanks to said outlet, and means to give said device a rocking movement.

6. In a blank feeding mechanism, a hopper having a discharge passage in its bottom and a rotatable feed member having a lateral projection thereon, and a laterally adjustable plate at the side of said member to determine the size of the blanks to be fed by said member through said passage.

7. The hopper having a circular pocket in its bottom and a discharge passage for the blanks open thereto at its side and open to the hopper at its top, in combination with an oscillating feeding and agitating device set into said hopper opposite said passage and constructed to carry blanks into both the top and side of said passage.

8. A feeding mechanism comprising a hopper having a discharge passage and a rocking member disposed with its edge thereto and having a notch in one edge and a straight shouldered portion across its face from edge to edge, and means to impart oscillating movement to said member.

9. The hopper and an outlet passage open thereto, a rocking disk projecting into said hopper and passage, and said disk having a notched edge at its top and a shouldered portion at its bottom, and means to rock said disk.

10. The hopper having a semi-circular chamber at its bottom and a disk mounted in said chamber having its upper edge notched and projecting into said hopper and provided with a straight shoulder on its side face, and a discharge passage open to both said chamber and hopper.

In testimony whereof I sign this specification in the presence of two witnesses.

FREDERICK C. TYLER.

Witnesses:

R. B. MOSER,
C. A. SELF.